Amendments to the Specification:

Please amend the paragraph beginning at page 4, line 20 as follows:

Certain HF and HDF machines generate the fluid used during therapy at the time and place that the therapy takes place. Those machines are referred to as "on-line" machines because they make and provide the solution on-line. On-line machines use micro or ultrafilters to sterilize the solution or make it of an injectable quality before the solution is delivered to the patient's extracorporeal circuit. The filters over time accumulate bacteria and endotoxin along the outer filtering surfaces of the membranes located inside the filters. It is therefore desirable to have a method and apparatus that cleans or at least reduces the amount of bacteria and endotoxin that accumulate and reside along the membranes of the filters used to create dialysate on-line.

Please amend the paragraph beginning at page 10, line 30 as follows:

The present invention provides systems and methods for improving medical fluid delivery systems, such as hemodialysis ("HD"), hemofiltration ("HF") and hemodiafiltration ("HDF") systems. In various embodiments, systems and methods for selectively performing pre- and postdilution HF and HDF clearance modes are provided. In other embodiments, systems and methods for providing bolus, prime and rinseback fluid volumes during/after HD, HF and HDF therapies are provided. In ~~a~~ further embodiments, improved systems and methods for removing ultrafiltrate from the patient are provided. Still further, the present invention provides an improved filtration configuration and method.

Please amend the paragraph beginning at page 13, line 3 as follows:

Blood circuit 70 includes an arterial access line 72 and a venous access line 74. Arterial access line 72 includes a Y-connection 76 that connects to a dialysate input line described below. Arterial line 72 carries blood from patient 78 to an arterial drip chamber 80. Blood is transferred through extracorporeal circuit 70 via a peristaltic blood pump 82. Pump 82 pumps blood from arterial line 72, through drip chamber 80, to the blood inlet of dialyzer 44. The blood is pumped through the inside of ~~membrane~~ membranes contained within the dialyzer, wherein diffusive transport of toxins and waste products from the blood takes place, and from the output of dialyzer 44 into a venous drip chamber 84, through venous access line 74, and back to patient 78.

Please amend the paragraph beginning at page 18, line 16 as follows:

To provide the additional fluid, purge valve 122, which operates with ultrafilter 52, is opened during the bolus infusion as discussed above. Purge valves 122 and 124 operate normally with ultrafilters 52 and 54, respectively, to enable the filters to be rinsed prior to therapy. Opening purge valve 122 enables the additional needed fluid, e.g., the additional 100 ml/min, to be pulled through lines 125 and 126 and into the dialysate flow path 20. Liquid pulled through drain line 126 has previously flowed through dialyzer 44 and been pumped to drain 40 after passing through flow equalizer 30. Accordingly, the additional fluid pulled through line 126 ~~should to ensure that it is~~ needs to be sterilized to be of an injectable quality. The filters 52 and 54 and additional disposable filter 90 in filtration line 88 achieve that requirement. That is, fluid entering system 20 through purge valve 122 flows through ultrafilters 52 and 54, out substitution port 86, through a third ultrafilter or microfilter 90 and ultimately to patient 78. Filters 52 and 54 in one embodiment are large surface area, reusable filters. Disposable filter 90 can be an ultrafilter or a microfilter. Placing three filters in series enables system 10 to have triple redundancy during normal operation and for the bolus infusion.

Please amend the paragraph beginning at page 19, line 18 as follows:

The amount of the bolus volume is either predetermined or set by the operator upon initiating the bolus function, for example, via a touch screen controller. In one embodiment, the bolus amount is set into the machine employing system 10 via a keypad on the touch screen. The amount of bolus can be controlled, for example, by monitoring the number of rotations of substitution pump 94 or by pumping until a desired setting is achieved on one of the biosensors described ~~above.~~ above. After the bolus volume is delivered to the patient, isolate valve 120 is opened, purge valve 122 is closed, and bypass valve 58 is energized to allow dialysate to flow through predialyzer line 60, and not to line 62. Opening valves 120 and 58 re-establishes fluid communication with dialyzer 44. The TMP limits are accordingly reset or reopened. Prior to opening isolate valve 120, one stroke can be taken of the UF flowmeter 50 to help create a positive transmembrane pressure when isolate valve 120 is opened. That procedure may be helpful in achieving a set UF target for the patient.

Please amend the paragraph beginning at page 20, line 25 as follows:

One difference between the bolus function and the blood rinseback procedure is the location at which the blood rinseback volume is delivered to extracorporeal circuit 70. As discussed above, the bolus volume can be delivered to venous drip chamber 84. The rinseback amount is delivered on the other hand to the end of or to a point of arterial access line 72 marked by Y-connector or T-connector 79, which is appropriate to clean blood in arterial line 72 through pump 82, through arterial drip chamber 80, through dialyzer 44, through venous drip chamber 84 and finally through venous access line 74 to patient 78. Connector 79 is connected to predilution line 106 via solenoid valve 77 to enable automatic control of the rinseback feature. It is contemplated therefore to use the pre- and postdilution manifold 100 in combination with the rinseback feature of system 10 and to deliver the rinseback volume from substitution pump 94, through Y-connector 102, through predilution line 106, including check valve 112 and pinch valve 116, through line 106 and solenoid 77, to the arterial access line 72 at connector 79.